

Abstract of the Disclosure

A cell structure of a non-volatile memory device, which uses a nitride layer as a floating gate spacer, includes a gate stack and a floating gate transistor formed over a semiconductor substrate. The gate stack includes a first portion of a floating gate, a control gate formed over the first portion of the floating gate, and a non-nitride spacer adjacent to sidewalls of the first portion of floating gate. The floating gate transistor includes a second portion of the floating gate, which substantially overlaps a source and/or drain formed in the substrate. The application of ultraviolet rays to the non-nitride spacer of a programmed cell can causes the second portion of the floating gate to discharge, thereby easily erasing the programmed cell.